



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/642,481

08/18/2003

Nobuyuki Enomoto

MA-583-US

3816

21254

7590

07/24/2009

MCGINN INTELLECTUAL PROPERTY LAW GROUP, PLLC
8321 OLD COURTHOUSE ROAD
SUITE 200
VIENNA, VA 22182-3817

EXAMINER

BIAGINI, CHRISTOPHER D

ART UNIT

PAPER NUMBER

2442

MAIL DATE

DELIVERY MODE

07/24/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/642,481	Applicant(s) ENOMOTO ET AL.	
	Examiner Christopher Biagini	Art Unit 2442	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-9, 11-15, 18-24, 26-30, 33-39 and 41-45 is/are pending in the application.
- 4a) Of the above claim(s) 6, 15, 21, 30, 36 and 45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-5, 7-9, 11-14, 18-20, 22-24, 26-29, and 31-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments regarding the rejections under 35 USC 101 have been fully considered and are persuasive. Accordingly, the rejections have been withdrawn.

Applicant's arguments regarding the rejections under 35 USC 112, first and second paragraphs, have been fully considered and are persuasive. Accordingly, the rejections have been withdrawn.

Applicant's arguments regarding the rejections under 35 USC 103(a) have been fully considered but are not persuasive.

In response to applicant's arguments against Williams and the 802.1D specification individually, the Examiner respectfully submits that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Regarding the argument that the 802.1D specification does not show that the filtering database stores an output port for a destination MAC address, the Examiner respectfully disagrees. The 802.1D Learning Process “*create[s] or update[s] a Dynamic Filtering Entry (7.9, 7.9.2) in the Filtering database*” (emphasis added). The Dynamic Filtering Entry, in turn, contains a MAC address and “specifies forwarding of frames *destined for that MAC address* to a

Art Unit: 2442

single Port” (emphasis added). See pp. 42 and 44-45. Given that claims are given their broadest reasonable interpretation, the 802.1D specification plainly discloses a MAC forwarding table memory which stores an output port for a destination MAC address.

In response to Applicant’s argument that the Examiner has applied a “circular reasoning argument,” the Examiner respectfully disagrees. Indeed, Williams has provided an explicit suggestion of the desirability of the claimed invention (for example, that storing tag information corresponding to a VLAN tagged Ethernet frame provides the ability to add and remove VLAN tags as necessary, thereby providing more efficient use of memory capacity and transmission bandwidth). Per Applicant’s request, an explanation of the Examiner’s reasoning is supplied below. See also MPEP 2143.01, which describes the various motivations for combining references.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Applicant’s arguments with respect to the rejection of claims 11, 14, 26, 29, 41, and 44 have been fully considered but are not persuasive. Applicant incorporates arguments presented with respect to the independent claims, and the Examiner respectfully disagrees for at least the reasons given above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-5, 7-9, 12, 13, 18-20, 22-24, 27, 28, 33-35, 37-39, 42, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over ANSI/IEEE Std. 802.1D, 1998 Edition (hereinafter "the 802.1D specification") in view of Williams et al. (US Patent No. 6,515,993, hereinafter "Williams").

Regarding claim 3, the 802.1D specification shows a network system for a network having plural nodes connected (see Fig. 7.1), wherein a node (comprising a bridge) belonging to said network comprises:

- a CPU (Central Processing Unit, implicitly disclosed as part of the computer-implemented system of the 802.1D specification)) executing a learning frame management unit (comprising a forwarding process, which is implemented by a processing unit) which refers to a MAC SA table cache (comprising querying a filtering database) to determine whether a learning frame transmission request corresponding to said MAC SA has been is made (comprising determining whether a frame has been received that indicates an address-port mapping: see section 7.9.5 on p. 47 and section 7.8 on p. 42); and

Art Unit: 2442

- a memory system (implicitly disclosed as part of the computer-implemented system of the 802.1D specification) that stores:
- a MAC forwarding table memory (comprising a filtering database) which stores an output port for a destination MAC address (see section 7.9 on p. 42 and section 7.9.2 on p. 44), and
- the MAC SA table cache which stores a source MAC address which has made a learning frame transmission request (note that entries made by the learning process are based on the source address of frames: see section 7.8 on p. 42).

The 802.1D specification does not show that the MAC forwarding table stores destination tag information corresponding to a virtual local area network (VLAN) tagged Ethernet frame.

Williams shows storing in a memory (comprising the VLAN tables managed by host CPU 32: see col. 10, line 57 to col. 11, line 3) destination tag information (comprising a VLAN ID: see col. 1, lines 36-44) corresponding to a virtual local area network (VLAN) tagged Ethernet frame (comprising the Ethernet frame received on an input port of switch 12: see col. 10, lines 10-56).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the 802.1D specification with the port-tag mappings taught by Williams in order to provide the ability to add and remove VLAN tags as necessary, thereby providing more efficient use of memory capacity and transmission bandwidth (see Williams, col. 2, lines 20-33).

Regarding claim 4, the combination of the 802.1D specification and Williams shows the limitations of claim 3 as applied above, and the 802.1D specification further shows wherein said

Art Unit: 2442

nodes comprise an aging request acceptance unit which ages said MAC SA table cache (see first paragraph on p. 45), and a transmission request unit which makes a learning frame transmission request (comprising a bridge port which receives a frame and sends it to a learning process: see Fig. 7-5 and section 7.8 on p. 42). Note that the learning process uses the learning frame transmission request to manage a table (comprising the filtering database).

The 802.1D specification does not explicitly show sending the request to a CPU.

Williams shows a CPU managing a table (see col. 10, lines 57-61).

It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the 802.1D specification to use a CPU as taught by Williams in order to implement the specification with readily available computing hardware.

Regarding claim 5, the combination of the 802.1D specification and Williams shows the limitations of claim 4 as applied above, and the 802.1D specification further shows wherein said nodes have a learning management program which conducts a learning frame process (see section 7.8 on p. 42).

Regarding claim 7, the combination of the 802.1D specification and Williams shows the limitations of claim 3 as applied above, and the 802.1D specification further shows wherein said node has an equipment control program which conducts a variety of configurations (comprising the configuration of reserved addresses, static filtering information, and traffic class information: see section 7.1.2).

Art Unit: 2442

Regarding claim 8, the combination of the 802.1D specification and Williams shows the limitations of claim 3 as applied above, and the 802.1D specification further shows said node comprises a frame type judgment unit which judges an input frame (comprising a forwarding process, which judges whether to forward incoming frames, and where to forward them to: see section 7.7.2).

Regarding claim 9, the combination of the 802.1D specification and Williams shows the limitations of claim 3 as applied above, and the 802.1D specification further shows wherein a node belonging to said network comprises: an aging control unit which ages an entry to be aged (comprising the unit which ages entries in the filtering database: see first paragraph of p. 45), and an aging management table which stores an entry to be aged (comprising the filtering database, which stores the dynamic filtering entries which are aged).

Regarding claim 12, the combination of the 802.1D specification and Williams shows the limitations of claim 3 as applied above, and further shows wherein said node comprises a tag forwarding table memory which stores an output port for a forwarding tag (comprising the memory which holds tables 601 and 603 in Fig. 6: see Williams, col. 10, line 57 to col. 11, line 21).

Regarding claim 13, the combination of the 802.1D specification and Williams shows the limitations of claim 3 as applied above, and the 802.1D specification further shows wherein said node comprises: a table (filtering database: see section 7.9); an aging circuit (comprising the

Art Unit: 2442

circuit which ages entries in the filtering database: see p. 45); and a forwarding table having a table read/write circuit (comprising a filtering database, which necessarily has a read/write circuit because it can be read from and written to: see p. 33).

Claims 18-20, 22-24, 27, and 28 are apparatus claims corresponding to system claims 3-5, 7-9, 12, and 13 and are rejected for the same reasons as applied above.

Claims 33-35, 37-39, 42, and 43 are method claims corresponding to system claims 3-5, 7-9, 12, and 13 and are rejected for the same reasons as applied above.

Claims 11, 14, 26, 29, 41, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over ANSI/IEEE Std. 802.1D, 1998 Edition ("the 802.1D specification") in view of Williams (US Patent No. 6,515,993), and further in view of Liu (US Pub. No. 2002/0191628).

Regarding claim 11, the combination of the 802.1D specification and Williams shows the limitations of claim 3 as applied above, but does not explicitly show wherein said node comprises a broadcast table memory which stores an output destination port at a time of broadcasting to a tag.

Liu shows a broadcast table memory which stores an output destination port at a time of broadcasting to a tag (see [0023]-[0024]).

Art Unit: 2442

It would have been obvious to one of ordinary skill in the art to further modify the 802.1D specification to store an output destination port at a time of broadcasting to a tag in order to prevent the system from having to calculate the port repeatedly (see Liu, [0024]).

Regarding claim 14, the combination of the 802.1D specification and Williams shows the limitations of claim 3 as applied above, but does not explicitly show wherein said node comprises a TAG address management table which stores an address of a forwarding tag on a MAC forwarding table memory.

Liu shows a tag address management table which stores an address of a forwarding tag (see [0022]).

It would have been obvious to one of ordinary skill in the art to further modify the 802.1D specification to store an address of a forwarding tag as taught by Liu in order to provide for efficient distribution of broadcast messages to that tag (see Liu, [0007]).

Claims 26 and 29 are apparatus claims corresponding to system claims 11 and 14, and are rejected for the same reasons as applied above.

Claims 41 and 44 are method claims corresponding to system claims 11 and 14, and are rejected for the same reasons as applied above.

Conclusion

Art Unit: 2442

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER D. BIAGINI whose telephone number is (571)272-9743. The examiner can normally be reached on weekdays from 8:30 AM to 5:00 PM..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571) 272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christopher Biagini
(571) 272-9743

/Andrew Caldwell/
Supervisory Patent Examiner, Art Unit
2442